

## REMARKS

Claims 1 – 7 are pending in the present application. No claims have been amended or cancelled, leaving Claims 1 – 7 for consideration upon entry of the present amendment.

### Drawings:

Figure 1 was objected to because it was too light. (Office Action dated April 4, 2007, page 2) A Replacement Figure 1 has been provided which should obviate this objection.

### Claims Rejection Under 35 U.S.C. § 102

Claims 1, 7 are rejected under 35 U.S.C. § 102(b) as being anticipated by Korean Patent No. 10020000014672 to Kim. (Kim) (Office Action dated April 4, 2007, page 2) Applicants respectfully disagree.

To anticipate a claim under 35 U.S.C. ' 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988).

The present application is directed to and claims an anode active material slurry comprising (a) a carbon-based anode active material, that is capable of lithium ion intercalation/ deintercalation; (b) a conductive agent; (c) a binder comprising a styrene-butadiene-based polymer resin; (d) a thickener comprising a cellulose-based or an acrylate-based resin; (e) a dispersant comprising a polymer backbone capable of surface-adsorption and a side-chain having non-ionic surfactant properties; and (f) water. (Claim 1)

Kim teaches a method of manufacturing an electrode for a lithium ion secondary battery comprising mixing and agitating an active material comprising soft carbon, a binder of styrene butadiene, water and thickener; coating the slurry on a substrate drying it at 100 – 130°C and 100-5 torr; pressing using a roll followed by cutting. (see Abstract)

Kim does not teach a dispersant as is presently claimed. For this reason at least, Kim cannot anticipate the claimed invention. Applicants respectfully request a withdrawal of the rejection under 35 U.S.C. § 102(b) and an allowance of the claims.

Claims 1, 3-5, 7 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application No. 20060040182 A1 to Kawakami et al. (Kawakami) (Office Action dated April 4, 2007, page 3) Applicants respectfully disagree.

In making the rejection, the Examiner has stated that “Kawakami teaches an active slurry material comprising: (a) a carbon based anode active material.” (Office Action dated April 4, 2007, page 3) This is inaccurate.

Kawakami teaches that the electrode material for a lithium secondary battery comprises particles of a solid state silicon alloy having silicon as a main component, wherein the particles of the solid state alloy have a microcrystal or amorphous material comprising an element other than silicon, dispersed in a microcrystalline silicon or amorphized silicon material. (see paragraph [0021]) Kawakami actually dissuades one from using carbon. (see paragraphs [0004] and [0005]) For this reason at least, Kawakami does not teach all elements of the claimed invention and hence cannot anticipate the claimed invention. Applicants respectfully request a withdrawal of the rejection under 35 U.S.C. § 102(b) and an allowance of the claims.

Claims 1, 3-5, 7 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application No. 20040248011 A1 to Asao et al. (Asao) (Office Action dated April 4, 2007, page 3) Applicants respectfully disagree.

In making the rejection, the Examiner has stated that “Asao teaches an active slurry material comprising: (a) a carbon based anode active material.” (Office Action dated April 4, 2007, page 4) This is inaccurate.

Asao, like Kawakami, teaches that the electrode material for a lithium secondary battery comprises particles of silicon having a particle size of 0.02 to 5 micrometers. (see Abstract) Applicants respectfully request the Examiner to specifically point out where Asao teaches a carbon based anode active material.

For this reason at least, Asao does not teach all elements of the claimed invention and hence cannot anticipate the claimed invention. Applicants respectfully request a withdrawal of the rejection under 35 U.S.C. § 102(b) and an allowance of the claims.

### Claims Rejection Under 35 U.S.C. § 103

Claims 2 and 6 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kawakami or Asao. (Office Action dated April 4, 2007, page 5) Applicants respectfully disagree.

In making the rejection, the Examiner has stated that “Kawakami and Asao teach the anode material.” (Office Action dated April 4, 2007, page 5) This is inaccurate.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

As noted above, both Kawakami and Asao do not teach all elements of the claimed invention. They each teach electrodes comprising silicon particles, not carbon particles as presently claimed. As noted above, Kawakami teaches away from using carbon electrodes. One of ordinary skill in the art would not be motivated to use carbon electrodes after reading Kawakami.

In addition, Asao also dissuades one from using carbon electrodes. In paragraphs [0006] and [0007], Asao teaches that because the negative electrode formed from a carbonaceous material can theoretically only intercalate a maximum of 1/6 of the lithium atoms per carbon atom, a high energy density secondary battery comparable with a lithium primary battery when using metallic lithium as the negative electrode material has not been realized.

Asao in paragraph [0008] further states that:

During charging, however, if an amount higher than the theoretical amount of lithium is tried to be intercalated at a negative electrode comprising carbon of a “lithium ion battery”, or charging is performed under high electric

current conditions, lithium metal in a dendrite shape develops on the carbon negative electrode surface, possibly ultimately resulting in an internal short-circuit between the negative electrode and positive electrode from the repeated charge/discharge cycles.

One of ordinary skill in the art, upon reading these disapproving statements of Asao and Kawakami would not be motivated to use a carbon electrode. On the contrary, one would be dissuaded from using carbon electrodes.

Applicants believe that the Examiner has not made a prima facie case of obviousness over either Kawakami or Asao. Applicants respectfully request a withdrawal of the rejection under 35 U.S.C. § 103 (a) and an allowance of the claims.

It is believed that the foregoing remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this response or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Assignee.

Respectfully submitted,

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